



Parks Canada Best Management Practice (BMP) for Aircraft Operations and Landings in Nahanni and Nááts'ihch'oh National Park Reserves of Canada

Southwest Northwest Territories Field Unit

February 2018



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This Best Management Practice (BMP) examines potential interactions between the environment¹ and aircraft landings in Nahanni National Park Reserve (hereafter Nahanni) and Nááts'ihch'oh National Park Reserve (hereafter Nááts'ihch'oh).

Impact Assessment Officers (IAOs) may recommend use of this BMP during Step 4 (Conduct Preliminary Screening) of PCA's Preliminary Screening Process under the *Mackenzie Valley Resource Management Act* (MVRMA). The IAO must ensure that the development is recorded in the [Parks Canada National Impact Assessment Tracking System \(northern section\)](#).

Name of Best Management Practice (BMP)	Parks Canada Best Management Practice (BMP) for Aircraft Operations and Landings in Nahanni and Nááts'ihch'oh National Park Reserves of Canada, Southwest Northwest Territories Field Unit.
Scope of Application:	This BMP provides the preliminary screening assessment and mitigations required for aircraft operations/landings for: • Park management and operational activities • Commercially guided eco-tourism activities • Private aircraft charters by park visitors Notes: "Aircraft" refers to rotary and fixed-wing aircraft equipped with skis, floats, wheels, or skids. At present, Unmanned Aerial Vehicles (UAVs), commonly known as drones, are not covered by this BMP.
Exceptions:	A preliminary screening form must be completed to address additional effects if the aircraft landing: • has the potential for residual adverse effects on an individual or a residence of a listed species at risk² (endangered, threatened, or extirpated status) or any adverse effects on the critical habitat of a listed species at risk. • is not listed in the "scope of application"; • is a one-time, occasional, or annual special event such as a military exercise or sporting event that takes place in or outside of a designated landing site. Note: Aircraft landings in the case of emergencies (e.g., rescue of sick, injured, or stranded visitors, evacuation in the case of wildfire) are not subject to this BMP or to the Environmental Impact Assessment process.

¹ Environment: land, water, air or any other component of the environment, as well as on wildlife harvesting, the social and cultural environment, and heritage resources (MVRMA, s 111(1)). Includes species at risk as listed on Schedule 1 of the *Species at Risk Act*

² Species at risk as listed on Schedule 1 of the *Species at Risk Act*

	Note: Impact Analysis advice: If there is any uncertainty concerning the application of this BMP, consult a member of the Parks Canada Impact Assessment Team. Species at Risk advice: If there is any uncertainty regarding potential adverse effects to species at risk, consult a member of the Parks Canada Species and Conservation Management Team. Cultural Resource advice: If there is any uncertainty regarding potential adverse effects to cultural resources, consult Patrick Carroll (Cultural Resource Management Advisor, SW NWT Field Unit)
Approved geographic area of application:	This BMP is intended for use in Nahanni National Park Reserve of Canada and Nááts'ihch'oh National Park Reserve of Canada.

Effects Assessment (components of the environment that may be affected)

Potential effects from aircraft landings in Nahanni and Nááts'ihch'oh are well understood and predictable. They include:

Soil/Land Resources

- Soil compaction and rutting (from landing/take-off or foot traffic from embarkation/disembarkation)
- Soil contamination (garbage left at the landing area or spills could release toxic chemicals that could leach into the soil)
- Removal of fossils (Operators and/or clients may remove fossils from park)

Air/Noise Quality

- Decreased site-specific air quality (from aircraft exhaust or fuel fumes)
- Site-specific noise pollution (from aircraft landing/take-off)

Aquatic Resources

- Compaction, rutting, and erosion of riparian areas (from trampling at disembarkation/embarkation sites, floats pushing up on shorelines, and helicopter skids)
- Decreased water quality (from pollution from garbage, human waste, erosion from wave action during landing and take-off, or spills)

Flora and Fauna

- Compaction of vegetation (from foot traffic or aircraft take-off/landing)
- Clients may pick flowers/plants
- Inadvertent introduction of non-native species (e.g., seeds transported on footwear or clothing)
- Wildlife disturbance (aircraft noise could cause displacement from habitat or alteration in the use of movement corridors)
- Disturbance, damage, or destruction of sensitive flora, nests, dens, and fish spawning areas (by foot traffic during embarkation/disembarkation or wave action caused by floatplanes during take-off and landing of aircraft)
- Contamination of flora or negative effects to fauna (from garbage decomposition or aircraft/refueling accidents)
- Human/wildlife conflict (landing near wildlife may result in human-wildlife conflict -if human life is in danger, the animal may need to be relocated or destroyed)
- Conditioning of wildlife to human garbage and/or fuel (if improperly managed solid waste and/or stored fuel are an attractant to wildlife, altering their behavior, movement patterns and natural feeding habits)
- Species at Risk: Although species at risk exist in both park reserves covered under this BMP it is not expected that aircraft landings will result in residual adverse effects if the mitigations described in this BMP are applied.

Visitor Experience

- Decrease in wilderness experience (aircraft over-flights can disturb visitors on the ground by causing visual and noise pollution, aircraft or refueling accidents could contaminate or damage natural or heritage resources, and the presence of garbage and improperly disposed human waste can detract from the wilderness experience)
- Threats to human health and safety (from aircraft or refuelling accidents)
- Stored fuel can attract wildlife, potentially posing a threat to operators and clients

Social/Cultural Environment (including Wildlife Harvesting)

- Decrease in Indigenous land use experience (if aircraft landings/take-offs or disembarking/embarking passengers interfere with wildlife populations or habitat or leave behind garbage and/or human waste, or if aircraft or refuelling accidents contaminate or damage natural and heritage resources)
- Decrease in Indigenous hunting success (if aircraft over-flights, take-offs, or landings frighten target wildlife)
- Aircraft over-flights, take-offs, and landings can diminish the experience of Indigenous people on the land by causing visual and noise pollution

Heritage Resources: (from MVRMA (s.2) - *archaeological or historic sites, burial sites, artifacts and other objects of historical, cultural, or religious significance, and historical or cultural records, to be directly associated with an important aspect or aspects of human history and culture*)

- Trampling or disturbance of heritage resources (trampling at embarkation/disembarkation areas or compaction/disturbance from aircraft take-off and landings may have localized erosive or rutting effects and can disturb/damage heritage resources, especially if operators chose the same location repeatedly).
- Wave action caused by floatplanes could cause shore erosion, which may impact heritage resources
- Floatplanes running-up on shore to unload can potentially disturb heritage resources
- Spills could contaminate or damage heritage resources

Mitigation Measures

General

1. Check for, remove, and dispose of into garbage containers any bur-like seedpods or mud from equipment, boots, clothing, and pets prior to departure to reduce risk of introducing invasive plant species.
2. Vegetation and natural objects (bones, antlers, rocks, fossils) cannot be removed, defaced, damaged, or destroyed, including the eating of plants or berries.
3. If a dog is brought into the park, it must be kept on leash at all times and must not be left unattended. Immunizations must be up to date and waste dealt with in the same way as human waste.
4. Indigenous People can and may be exercising their traditional rights, including harvesting and motorized access, within park boundaries and these rights must be respected.
5. Heritage resources (defined above) must not be removed or otherwise disturbed. It is important that artifacts are left in place as their relationship to each other and the landscape tells an interpretive story.
6. The discovery of a heritage resource must be reported to Parks Canada. Include information on what was seen, the location of where the material was encountered and, if possible, a GPS coordinate and photograph.
7. Rocks must not be removed or disturbed from any features that look, even remotely, like they were human-made. These include, for example, cairns (rock piles), tent rings, and food caches.
8. Inukshuks are not culturally appropriate and should not be built.
9. Day visitors should bring their own filled water bottles to avoid having to pack in water purification equipment.
10. Parks Canada maintenance equipment and boats must not be used by visitors or business licence holders.

Management of Solid Waste

11. Solid waste/garbage created by an individual or group must be packed out upon that individual or group's departure from the park.
12. Reduce litter by minimizing the amount of cans, bottles, tin foil, and other wrappers taken into the park.
13. When feasible, pick up litter left by others.
14. Report any large accumulations of solid waste or large items, such as empty fuel drums, to park staff.

Management of Human Waste

15. Encourage clients to use the washroom before boarding the aircraft to depart for the park.
16. If there are no outhouses or composting toilets at a landing site:
 - i. Urinate and defecate at least 60 metres away from the aircraft landing site, heritage resources, and water bodies. Rocky or gravelly sites may reduce attraction for wild animals and are preferred sites for urination.

- ii. Deposit solid human waste in a shallow hole 15 to 20 cm deep in soil-covered areas (in snow/glaciers, bury as deep as possible) and at least 60 metres away from the aircraft landing site, heritage resources, and water bodies. Cover and disguise the hole when finished; avoid disturbing plant communities.
- iii. Pack out or burn all (in fire box or designated fire pit) used toilet paper.
- iv. Pack out hygiene products and used air sickness bags.

Management and Handling of Fuel

- 17. Ensure absorbent material is available to soak up any small spills during refuelling.
- 18. Use an environmentally safe fuel purge system to keep fuels in the aircraft.
- 19. If fuel storage is allowed under the aircraft access permit refer to the *Fuel Caching Protocol for Nahanni National Park Reserve and Nááts'ihch'oh National Park Reserve*.

Flight and Operation of Aircraft¹

- 20. Aircraft incidents must be reported to Parks Canada.
- 21. Never circle, chase, hover over, dive bomb, pursue, or in any other way harass wildlife from the air.
- 22. Do not alter the flight path to approach wildlife and avoid flying directly over or at wildlife (i.e. approach on an angle), especially congregations of animals.
- 23. If you observe running, panic, or startled responses from animals, ascend to a higher flight path or veer away.
- 24. Aircraft access permits are not to be used for viewing or photography of wildlife. For passengers requesting wildlife photographic opportunities, pilots must explain that disturbance of wildlife could result in loss of business licence or charges under the *Canada National Parks Act*.
- 25. As recommended in the *Transport Canada Aeronautical Information Manual* (RAC 1.14.15), overflights should not be conducted below 2,000 feet AGL when in the air space over the parks except on approach to landing, take-off, or for safety reasons.
- 26. Maintain an altitude of 3,500 feet AGL above, and avoid when possible, sensitive areas such as raptor nesting sites, bird sanctuaries, and areas with bird concentrations (colonies or moulting areas). Avoid nationally important bird habitat areas such as Yohin Lake, Mid Lake, and Fishtrap Creek (together identified as a Key Migratory Bird Terrestrial Habitat Site (NT Site 17) by the Canadian Wildlife Service).
- 27. Whenever possible, fly more than 3.5 km from known animal ranges. Avoid known lambing cliffs and mineral licks from May 1 to June 15. Avoid snow patches where caribou are known to gather in the post-calving period (i.e. June) and mineral licks in spring.
- 28. When flying through sheep ranges, when possible plan a route that places a ridge (potential visual and sound barrier) between aircraft and the sheep, and fly below the sheep so they may seek safety upslope.
- 29. Plan routes to avoid close encounters with wildlife, camps of Indigenous People, and other park users.

30. Aircraft operations are under the jurisdiction of Transport Canada and air access to parks under the jurisdiction Parks Canada and *Canada National Parks Act*; all applicable regulations must be followed

¹Subject to pilot discretion regarding aircraft and human safety. Safety of passengers is the responsibility of the pilot.

Approach and Landing¹

31. In the event that dens, active nests, or young animals are accidentally encountered at a landing site, attempt to minimize disturbance.
32. If wildlife are on the landing site do not land until they are well away from the site. Aircraft must never be used to move or push wildlife away from the landing site.
33. Do not disturb or otherwise harass any wildlife that may approach, or that are visible from, the landing site. If there are safety concerns, follow protocols in the Nahanni National Park Reserve "Bears and People" brochure.
34. Report wildlife sightings, unusual wildlife behaviour, encounters with wildlife, injured animals and carcasses to Parks Canada. Marked animals (radio collars, ear tags, leg bands on birds, neck bands on swans) and injured animals should also be reported.
35. Ensure clients gathering around the aircraft choose locations on the most durable surfaces whenever possible. Rock, talus, gravel, sand, and gravel stream bottoms are considered to be the most durable surfaces.
36. Do not make markers, cairns or inukshuks, blaze trees, or otherwise damage vegetation to mark a landing site.
37. Foot traffic must be limited to hardened locations in the area if heritage resources are exposed as a result of landing-related actions.
38. When feasible and safe, minimize the time aircraft spend running on the ground, the number of flights, the amount of time hovering or circling before landing, and the speed, approach distance, and rate of descent.
39. When taxiing to shore, aircraft on floats must avoid producing a wake that disturbs/erodes the shoreline and shallow water habitats.
40. To minimize shoreline erosion, aircraft on floats must select shore pull-up locations with firm substrates, where possible, and unload using a "chain-gang" approach to minimize foot traffic to and from the plane.

¹Subject to pilot discretion regarding aircraft and human safety. Safety of passengers is the responsibility of the pilot.

Approval

Name: Jonathan Tsetso (Superintendent, Nahanni NPR)	Date: February 21, 2018
Signature: 	
Name: Laani Uunila (Superintendent, Nááts'ihch'oh NPR)	Date: February 21, 2018
Signature: 	

Review Period

Review required: Every 3-5 years

Last reviewed: February 2018

References

In addition to receiving expert park-specific review and review by business licence holders, this BMP has been adapted from:

- Parks Canada Agency. March 2011. *Replacement Class Screening Report for Aircraft Landings in the Northern National Parks of Canada (Aulavik National Park of Canada and Tukturnogait National Park of Canada)*.
- Parks Canada Agency. December 2004. *Replacement Class Screening for Aircraft Landings in Aulavik National Park of Canada, Auyuittuq National Park of Canada, Ivvavik National Park of Canada, Kluane National Park and Reserve of Canada, Quttinirpaaq National Park of Canada, Sirmilik National Park of Canada, Tukturnogait National Park of Canada, and Ukkusiksalik National Park of Canada*.
- Parks Canada Agency. 2013. *Cultural Resource Management Policy*. Heritage Conservation and Commemoration Directorate, Parks Canada.
- Government of Yukon. 2010. *Flying in Caribou Country*. Mining and Petroleum Environment Research Group Report 2008-1.
- Government of Yukon. 2006. *Flying in Sheep Country*. Mining Environment Research Group Report 2002-6.
- Nunavut Planning Commission. 2016. *Nunavut Land Use Plan. 2016 Draft*.